

## Janicki Omni Processor Project

Location: Sedro Woolley, WA at the Janicki ([ HYPERLINK "http://www.janicki.com" ]) corporate headquarters. The site is not at a wastewater treatment plant.

Description: Small fluidized bed combustor with heat recovery steam generation for the production of electrical power using a steam powered reciprocating engine genset.

Design capacity: 5.15 MMBtu/hour (about 7 tons per day of dry solid fuel)

Fuel: Sewage sludge with supplemental firing using clean sawdust and propane\*.

\* Janicki would like to combust refused derived fuel if allowed by federal regulation without triggering applicability of CISWI regulations. Based on the analysis below it appears that the Omni Processor could combust up to 30% by weight of auxiliary fuel that is refuse derived without being subject to 40 CFR 60 Subpart CCCC or Subpart EEEE. Janicki has the ability to generate an auxiliary fuel stream that is refused derived from scrap material generated at their reinforced plastics manufacturing plant located in Sedro Woolley.

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## Draft Federal Regulation Applicability Analysis

by Dan Mahar, NWCAA 12/26/13

### 40 CFR 60 Subpart O - Standards of Performance for Sewage Treatment Plants

Subpart O is applicable because the Janicki incinerator will combust more than 2,250 lb/day of municipal sludge, and the project will commence construction after June 11, 1973. [§60.150]

§60.150 Applicability and designation of affected facility.

(a) The affected facility is each incinerator that combusts wastes containing more than 10 percent sewage sludge (dry basis) produced by municipal sewage treatment plants, or each incinerator that charges more than 1000 kg (2205 lb) per day municipal sewage sludge (dry basis).

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

40 CFR 60 Subpart AAAA - Standards of Performance for Small Municipal Waste Combustion Units for Which Commenced After August 30, 1999 or for Which Modifications or Reconstruction is Commenced After June 6, 2001

Not applicable because the Janicki incinerator does not have the capacity to combust municipal solid waste or refuse-derived fuel at a rate of 35 tons per day or more. [§60.10109(b)]

40 CFR 60 Subpart BBBB - Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units Constructed On or Before August 30, 1999

Not applicable because the Janicki project is being constructed after August 30, 1999. [§60.1505(a)]

**40 CFR 60 Subpart CCCC - Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction is Commenced After June 1, 2001**

Not applicable because the Janicki Omni Processor is an incineration unit regulated under 40 CFR 60 Subpart O. [§60.2020]

§60.2020 What combustion units are exempt from this subpart?

(m) Sewage treatment plants. Incineration units regulated under subpart O of this part (Standards of Performance for Sewage Treatment Plants

(o) Other solid waste incineration units. Incineration units that are subject to subpart EEEE of this part (Standards of Performance for Other Solid Waste Incineration Units) or subpart FFFF of this part (Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units).

§60.2265 What definitions must I know?

Commercial and industrial solid waste incineration (CISWI) unit means any distinct operating unit of any commercial or industrial facility that combusts, or has combusted in the preceding 6 months, any solid waste as that term is defined in 40 CFR part 241. If the operating unit burns materials other than traditional fuels as defined in §241.2 that have been discarded, and you do not keep and produce records as required by §60.2175(v), the operating unit is a CISWI unit. While not all CISWI units will include all of the following components, a CISWI unit includes, but is not limited to, the solid waste feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The CISWI unit does not include air pollution control equipment or the stack. The CISWI unit boundary starts at the solid waste hopper (if applicable) and extends through two areas: The combustion unit flue gas system, which ends immediately after the last combustion chamber or after the waste heat recovery equipment, if any; and the combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. The CISWI unit includes all ash handling systems connected to the bottom ash handling system.

Municipal solid waste or municipal-type solid waste means household, commercial/retail, or institutional waste. Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).

Where §241.2 states;

Sludge means the accumulated semiliquid suspension of settled solids deposited from wastewaters or other fluids in tanks or basins. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows or other common water pollutants.

Solid wastes means garbage, refuse, sludges, and other discarded solid materials resulting from industrial and commercial operations and from community activities. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows or other common water pollutants.

40 CFR 60 Subpart DDDD - Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units

Not applicable because the Janicki project is being constructed after June 4, 2010. [§60.2505]

40 CFR 60 Subpart EEEE - Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006

Not applicable because the Janicki Omni Processor is a co-fired combustor that would otherwise be considered a very small municipal waste combustion unit (less than 35 tons per day) under Subpart EEEE that has a federally enforceable permit (OAC 1161a) limiting the combustion of municipal solid waste to 30 percent of the total fuel input by weight. [§60.2887(b)]

§60.2887 What combustion units are excluded from this subpart?

This subpart excludes the types of units described in paragraphs (a) through (q) of this section, as long as you meet the requirements of this section.

(b) Co-fired combustors. Your unit, that would otherwise be considered a very small municipal waste combustion unit, is excluded if it meets the five requirements specified in paragraphs (b)(1) through (5) of this section.

(1) The unit has a Federally enforceable permit limiting the combustion of municipal solid waste to 30 percent of the total fuel input by weight.

(2) You notify the Administrator that the unit qualifies for the exclusion.

(3) You provide the Administrator with a copy of the Federally enforceable permit.

(4) You record the weights, each calendar quarter, of municipal solid waste and of all other fuels combusted.

(5) You keep each report for 5 years. These records must be kept on site for at least 2 years. You may keep the records off site for the remaining 3 years.

§60.2977 What definitions must I know?

Municipal solid waste means refuse (and refuse-derived fuel) collected from the general public and from residential, commercial, institutional, and industrial sources consisting of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials and non-combustible materials such as metal, glass and rock, provided that: (1) the term does not include industrial process wastes or medical wastes that are segregated from such other wastes; and (2) an incineration unit shall not be considered to be combusting municipal solid waste for purposes of this subpart if it combusts a fuel feed stream, **30 percent** or less of the weight of which is comprised, in aggregate, of municipal solid waste, as determined by §60.2887(b).

Other solid waste incineration (OSWI) unit means either a very small municipal waste combustion unit or an institutional waste incineration unit, as defined in this subpart. Unit types listed in §60.2887 as being excluded from the subpart are not OSWI units subject to this subpart. While not all OSWI units will include all of the following components, an OSWI unit includes, but is not limited to, the municipal or institutional solid waste feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The OSWI unit does not include air pollution control equipment or the stack.

Very small municipal waste combustion unit means any municipal waste combustion unit that has the capacity to combust less than 35 tons per day of municipal solid waste or refuse-derived fuel, as determined by the calculations in §60.2975.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Where §60.2975 states;

(b) Capacity of a very small municipal waste combustion unit. For very small municipal waste combustion units that can operate continuously for 24-hour periods, calculate the unit capacity based on 24 hours of operation at the maximum charge rate. To determine the maximum charge rate, use one of two methods:

(1) For very small municipal waste combustion units with a design based on heat input capacity, calculate the maximum charging rate based on the maximum heat input capacity and one of two heating values:

(i) If your very small municipal waste combustion unit combusts refuse-derived fuel, use a heating value of 12,800 kilojoules per kilogram (5,500 British thermal units per pound).

40 CFR 60 Subpart FFFF - Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units that Commenced Construction on or Before December 9, 2004

Not applicable because the Janicki project will be constructed after December 9, 2004

40 CFR 60 Subpart LLLL - Standards of Performance for New Sewage Sludge Incineration Units

Not applicable because the Janicki incinerator will not be located at a wastewater treatment facility designed to treat domestic sewage sludge. [§60.4780]

Note: The owner or operator of such a combustion unit must notify the Administrator of an exemption claim under §60.4780.

40 CFR 60 Subpart MMMM - Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units

Not applicable because the Janicki project will be constructed after October 14, 2010. [§60.5005]

#### **40 CFR 241 – Solid Wastes Used as Fuels or Ingredients on Combustion Units**

40 CFR 241 Subpart A – General and Subpart B - Identification of Non-Hazardous Secondary Materials That Are Solid Wastes When Used as Fuels or Ingredients in Combustion Units

Not applicable because the Janicki is not be limiting materials combusted in the incinerator to those defined as “Non-Hazardous Secondary Materials” under Part 241. The initial OAC 1161 was for combustion of wood in the Omni Processor and relied on the definition in Part 241. However, revision OAC 1161a allows for a more diverse feedstock that does not rely on combusting only traditional wood derived fuels and non-hazardous secondary materials.

#### **40 CFR 503 - Standards for the Use or Disposal of Sewage Sludge**

##### Subpart A—General Provisions

Subpart A is applicable because the Janicki incinerator will fire sewage sludge [503.40]

The requirements of Subpart A include;

- Sampling methods for sewage sludge fired in a sewage sludge incinerator
- Including, but not limited to, viruses, coliform, inorganic pollutants, and total, fixed, and volatile solids.

##### Subpart E – Incineration

Subpart E is applicable because the Janicki incinerator will fire sewage sludge [503.40]

Subpart E allows up to 30% by weight of the feed to the incinerator to be auxiliary fuel that includes either traditions such as propane, and municipal solid waste. [503.419(b) and 503.6(c)]

§503.41 Special definitions.

(b) Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to **exceed 30 percent** of the dry weight of sewage sludge and auxiliary fuel together)

(n) Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired

§503.6 Exclusions

(c) Co-firing of sewage sludge. This part does not establish requirements for sewage sludge co-fired in an incinerator with other wastes or for the incinerator in which sewage sludge and other wastes are co-fired. Other wastes do not include auxiliary fuel, as defined in 40 CFR 503.41(b), fired in a sewage sludge incinerator

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#### **NOTES:**

##### **1. Federal Clean Air Act**

Title I, Part A, Section 129 - Solid waste combustion (42 USC § 7429)

(g) Definitions

For purposes of section 306 of the Clean Air Act Amendments of 1990 and this section only— (5) Municipal waste

The term “municipal waste” means refuse (and refuse-derived fuel) collected from the general public and from residential, commercial, institutional, and industrial sources consisting of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials and non-combustible materials such as metal, glass and rock, provided that:

(A) the term does not include industrial process wastes or medical wastes that are segregated from such other wastes; and

(B) an incineration unit shall not be considered to be combusting municipal waste for purposes of section 7411 of this title or this section if it combusts a fuel feed stream, **30 percent** or less of the weight of which is comprised, in aggregate, of municipal waste.